Claims

1. A method of introducing nucleic acid molecules to an animal comprising administering a composition comprising two or more gene delivery vehicles to an animal, each of said gene delivery vehicles containing a nucleic acid molecule not naturally contained within its corresponding gene delivery vehicle, in combination with a pharmaceutically acceptable carrier or diluent.

2. A method of introducing nucleic acid molecules to an animal comprising administering a composition comprising two or more gene delivery vehicles to an animal, each of said gene delivery vehicles directing the expression of at least one substance in host cells containing said gene delivery vehicles, the substance not naturally expressed by its corresponding gene delivery vehicle, said gene delivery vehicles a) collectively directing the expression of at least two different substances, or b) directing the expression of at least one substance wherein said gene delivery vehicles differ in one or more biological functions, in combination with a pharmaceutically acceptable carrier or diluent.

3. A method of introducing nucleic acid molecules to an animal comprising administering a composition comprising two or more gene delivery vehicles to an animal, each of said gene delivery vehicles containing at least one biologically active nucleic acid molecule wherein such biological activity is not naturally present in its respective gene delivery vehicle, said gene delivery vehicles a) collectively containing at least two different biologically active nucleic acid sequences, or b) containing at least one biologically active nucleic acid sequence wherein said gene delivery vehicles differ in one or more biological functions, in combination with a pharmaceutically acceptable carrier or diluent.

4. A method of introducing nucleic acid molecules to an animal comprising administering a composition comprising two or more gene delivery vehicles to an animal, at least one of said gene delivery vehicles directing the expression of at least one substance not naturally expressed by its corresponding gene delivery vehicle, and at least one of said gene delivery vehicles containing at least one biologically active nucleic acid sequence not naturally contained within its corresponding gene delivery vehicle, in combination with a pharmaceutically acceptable carrier or diluent.

5. A method of introducing nucleic acid molecules to an animal comprising administering two or more gene delivery vehicles to an animal at the same time and same site via a single administration device, each of said gene delivery vehicles directing

the expression of at least one substance in host cells containing said gene delivery vehicles, the substance not naturally expressed by its corresponding gene delivery vehicle, said gene delivery vehicles a) collectively directing the expression of at least two different substances, or b) directing the expression of at least one substance wherein said gene delivery vehicles differ in one or more biological functions. in combination with a pharmaceutically acceptable carrier or diluent.

6. A method of introducing nucleic acid molecules to an animal comprising administering a composition comprising two or more gene delivery vehicles to an animal, the method comprising the following steps:

a) separately preparing a first gene delivery vehicle and a second gene delivery vehicle, each of said gene delivery vehicles directing the expression of at least one substance in host cells containing said gene delivery vehicles, the substance not naturally expressed by its corresponding gene delivery vehicle, said gene delivery vehicles i) collectively directing the expression of at least two different substances, or ii) directing the expression of at least one substance wherein said gene delivery vehicles differ in one or more biological functions,

b) combining said first gene delivery vehicle and said second gene delivery vehicle with a pharmaceutically acceptable carrier or diluent to provide said composition; and

c) administering said composition to the animal.

7. The method of any one of claims 1-6 wherein said pharmaceutically acceptable carrier or diluent enhances the administration of said gene delivery vehicles.

8. The method of any one of claims 1-6 wherein said substance or said biological activity is not exhibited in said animal prior to said administration.

9. The method of any one of claims 3 or 4 wherein said biological activity is not exhibited in said host cells prior to administration.

10. The method of any one of claims 3 or 4 wherein said biological activity complements a biological activity present in said host cells prior to administration.

11. The method of any one of claims 3 or 4 wherein said biological activity activates a biological activity that had not been exhibited in said host cells prior to administration.

12. The method of any one of claims 3 or 4 wherein said biological activity replaces a biological activity exhibited in said host cells prior to administration.

13. The method of any one of claims 3 or 4 wherein said biological activity suppresses a biological activity exhibited in said host cells prior to administration.

14. The method of any one of claims 2, 5 or 6 wherein said composition comprises a first gene delivery vehicle directing the expression of an antigen stimulator and a second gene delivery vehicle directing the expression of a cytokine or an immune activating protein.

15. The method of any one of claims 2, 5 or 6 wherein said composition comprises a first gene delivery vehicle directing the expression of an enzyme capable of activating a conditionally lethal gene product and a second gene delivery vehicle directing the expression of a cytokine.

16. The method of any one of claims 2, 5 or 6 wherein said gene delivery vehicles direct the expression of two or more antigens.

17. The method of any one of claims 2, 5 or 6 wherein at least one of said gene delivery vehicles directs the expression of a systemically distributed gene product.

18. The method of claim 17 wherein said systemically distributed gene product is a protein.

19. The method of any one of claims 2, 5 or 6 wherein at least one of said gene delivery vehicles directs the expression of a locally distributed gene product.

20. The method of claim 19 wherein said locally distributed gene product is a protein.

21. The method of any one of claims 2, 5 or 6 wherein at least one of said gene delivery vehicles directs the expression of an immune suppressing protein.